Remarks

In response to the rejections made in the Office action, and in order to more correctly express the claimed subject matter, applicant has amended claims 1-4, 7-11, 13, 15-16 and 18. Applicant has also canceled claims 12 and 17 without prejudice, and has added a new claim 21.

Claim Rejections

Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 17 does not further limit the structural detail of the lens holder of claim 10.

In response to the rejection, applicant has canceled claim 17 without prejudice.

Claim Rejections under 35 U.S.C. 102

Claims 1-5, 10, 11 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Isaki (Japan Patent No. JP 62187808A).

Regarding claims 1-5, 10, 11 and 18-20, Examiner states to the effect that Isaki discloses a lens holder comprising all of applicant's claimed limitations of the present invention.

Isaki discloses **a lens holder comprising a master lens part (36) with two screw holes (35), a master flange (37) with a long hole (40),**

and a fixing screw (41). The screw holes (35) and the long hole (40) are perpendicular to an optical axis direction of the master lens part (36) and are configured on cylinder surfaces of the master lens part (36). The master lens part (36) is composed of two split lens barrels (20). The master lens part (36) is fitted in the master flange (37), and the fixing screw (41) is inserted into the long hole (40) of the master flange (37) and clamped lightly in one screw hole (35) of the split lens barrels (20). The master lens part (36) has a ring-shaped groove (33) and the master flange (37) has a guide hole (42). An eccentric pin is inserted into the guide hole (42) with a tip of the eccentric pin being engaged in the groove (33). The eccentric pin is movable in the optical axis direction of the master lens part (36) to make a back focus adjustment. A plurality of lenses (21, 22, 23) can be mounted in the master lens part (36).

In response to the rejection, applicant asserts that the claims are now patentable, as follows:

As regards amended claim 1 of the present invention, this recites a lens assembly for use in a camera, comprising:

a lens holder comprising at least two joined partitions, each partition comprising at least one joining edge where the partition joins at least one adjacent partition; and

a plurality of lenses received in the lens holder; wherein

at least one partition comprises one or more locking protrusions at the joining edge thereof, an adjacent partition correspondingly comprises one or more locking receptacles at the joining edge thereof, the locking protrusions are engagingly received in the locking receptacles to join the two partitions together, a plurality of partition platforms are formed inside at least one partition to define at least one room for accommodating and securing the plurality of lenses, and an opening is formed through each

partition platform.

The lens holder of Isaki comprises a master flange (37) and a fixing screw (41). Further, the master lens part (36) defines two screw holes (35) configured on the cylinder surface thereof, to match with the fixing screw (41). It is very important that the two split lens barrels (20) of Isaki cannot cooperatively form the master lens part (36) without the help of the master flange (37) and the fixing screw (41). **Without the master flange (37) and the fixing screw (41), the two split lens barrels (20) are merely two separate members.** It is the cooperation of the master flange (37), the fixing screw (41) and the screw hole (35) that enable the two split lens barrels (20) to become the master lens part (36). ***That is, the master flange (37), the fixing screw (41) and the screw hole (35) are absolutely necessary in Isaki.*** However, **in the present invention, the partitions can be assembled into a unified whole directly by means of the locking protrusions and locking receptacles thereof,** without the need for any other elements. ***That is, the present invention is simpler than the combination of necessary elements of Isaki's lens holder.*** For this reason alone, the invention of claim 1 is different from and novel over that of Isaki.

Further, unlike in the presently claimed invention, Isaki's lens holder does not comprise the locking protrusions and locking receptacles at the joining edges of the partitions. For this reason alone, the invention of claim 1 is different from and novel over that of Isaki.

For all the above reasons, it is submitted that independent amended claim 1 is very different from and novel over Isaki under 35 U.S.C. 102. Claims 2-5 depend on claim 1, and therefore are also novel over Isaki under 35 U.S.C. 102.

As regards amended claim 10 of the present invention, this recites a

lens holder for use in a camera, comprising:

a first housing half having a first plurality of partition platforms, a plurality of locking pins protruding from the first housing half; and

a second housing half being complementary to the first housing half, the second housing half having a second plurality of partition platforms, a plurality of locking holes being defined in the second housing half for engagingly receiving the locking pins; wherein

when the first housing half is assembled with the second housing half to form a complete housing, the partition platforms of the first housing half and the partition platforms of the second housing half together define a plurality of rooms inside said complete housing for receiving a plurality of lenses and together define openings for passage of light.

The lens holder of Isaki comprises a master flange (37) and a fixing screw (41). Further, the master lens part (36) defines two screw holes (35) configured on the cylinder surface thereof, to match with the fixing screw (41). It is very important that the two split lens barrels (20) of Isaki cannot cooperatively form the master lens part (36) without the help of the master flange (37) and the fixing screw (41). **Without the master flange (37) and the fixing screw (41), the two split lens barrels (20) are merely two separate members.** It is the cooperation of the master flange (37), the fixing screw (41) and the screw hole (35) that enable the two split lens barrels (20) to become the master lens part (36). ***That is, the master flange (37), the fixing screw (41) and the screw hole (35) are absolutely necessary in Isaki.*** However, **in the present invention, the first and second housing halves can be assembled into a unified whole directly by means of the locking pins and mounting holes thereof**, without the need for any other elements. ***That is, the present invention is simpler than the combination of necessary elements in Isaki's lens holder.*** For

this reason alone, the invention of claim 10 is different from and novel over that of Isaki.

Further, unlike in the presently claimed invention, Isaki's lens holder does not comprise a plurality of locking pins on a first housing half and a corresponding plurality of mounting holes on a second housing half. For this reason alone, the invention of claim 10 is different from and novel over that of Isaki.

For all the above reasons, it is submitted that independent amended claim 10 is very different from and novel over Isaki under 35 U.S.C. 102. Claim 11 depends on claim 10, and therefore is also novel over Isaki under 35 U.S.C. 102.

As regards amended claim 18 of the present invention, this recites a lens assembly comprising:

a lens holder defining a through hole along an axial direction thereof; and

a plurality of lenses axially spatially received in said lens holder to guide light passing through said through hole;

said lens holder including at least first and second parts assembled to each other, said first part defining at least one partition thereof and defining at least one lateral opening exposed to an exterior before said second part is assembled to said first part, a plurality of screw threads being formed on an outside surface of each of said at least first and second parts to cooperatively form a set of screw threads of the lens holder; wherein

at least one lens is inserted into a corresponding cavity derived from said at least one partition from the exterior through said lateral opening before said second part is assembled to said first part, and successively said lateral opening and said lens are hidden from the exterior after said second

part is assembled to said first part.

The lens holder of Isaki does not comprise screw threads defined on the outside surfaces of the split lens barrels (20) thereof. However, the present invention provides a set of screw threads formed on an outside surface of said at least first and second parts to form a set of screw threads on the lens holder. For at least this reason, it is submitted that the invention of claim 18 is different from and novel over that of Isaki under 35 U.S.C. 102.

Further, as detailed above, the present invention provides a plurality of screw threads formed on an outside surface of each of said at least first and second parts to form a set of screw threads on the lens holder. Therefore when ***the unified assembly is rotatingly attached to another fixture, the screw threads of the unified assembly can convert the rotation to linear movement.*** However, in Isaki, not only do the split lens barrels (20) not have any screw threads arranged thereon, the master lens part (36) cannot rotate relative to the master flange (37) because of the presence of the fixing screw (41).

Still further, the lens holder of the present invention is substantially round, and therefore can have the set of screw threads arranged thereon. However, in Isaki, **the outside surface of the lens holder is not round because of the protruding fixing screw (41) and the eccentric pin. Therefore the split lens barrels cannot have screw threads defined thereon because it is non-round.**

Isaki does not teach or suggest the screw threads of the lens holder of claim 18, which feature produces new and unexpected results. Therefore,

the invention of claim 18 is unobvious over Isaki.

For all the above reasons, it is submitted that independent amended claim 18 is not only very different from and novel over Isaki under 35 U.S.C. 102, but also unobvious and patentable over Isaki under 35 U.S.C. 103. Claims 19-20 and new claim 21 depend on claim 18, and therefore are also patentable over Isaki under 35 U.S.C. 102 and 35 U.S.C. 103.

Claim Rejections under 35 U.S.C. 103

Claims 7, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaki (Japan Patent No. JP 62187808 A) in view of Tichenor et al. (U.S. Pat. No. 4,187,534).

Regarding claims 7, 8 and 12, Examiner states to the effect that Isaki discloses all of the claimed features except a plurality of mounting pins formed on one of the two halves and a plurality of mounting holes on the other half, and that Tichenor et al. teaches the mounting pins and the mounting holes.

In response to the rejections, applicant asserts that the claims are now patentable, as follows:

Firstly, the lens holder of amended claim 1 of the present invention comprises the locking protrusions and the locking receptacles at the joining edges of the partitions. **The lens holder does not need other elements to join the partitions together, and there are no other portions such as protrusions or projections on the outside surfaces of the partitions.** However, in Isaki, the combination of the split lens barrels (20) needs the master flange (37) and the fixing screw (41). In Tichenor et al., two casings are held together by screws (38). **That is, additional elements**

are needed to combine the split halves both in Isaki and in Tichenor et al. ***Neither Isaki nor Tichenor et al. teaches a combination of partitions without the help of additional separate elements. Further, because of the simple construction of the lens holder of the present invention, assembly of the lens holder is quick and convenient. However, the more complex structures of each of Isaki and Tichenor et al. require more laborious assembly of the separated halves thereof.*** For these reasons alone, the invention of claim 1 is unobvious over Isaki in view of Tichenor et al.

Secondly, **the partitions of the present invention are not completely the same, because at least one partition has the locking protrusions and the adjacent partition has the cooperating locking receptacles.** However, **in Isaki, the two split lens barrels (20) are identical; and in Tichenor et al., the two casings are identical.** Any purported combination of Isaki and Tichenor et al. would still require substantial modification in order to arrive at the lens holder of the present invention. For this reason alone, the invention of claim 1 is unobvious over Isaki in view of Tichenor et al.

For at least the above reasons, independent claim 1 is submitted to be unobvious and patentable over Isaki in view of Tichenor et al. under 35 U.S.C. 103. Accordingly, claims 7-8 which are dependent on claim 1 are also patentable over Isaki in view of Tichenor et al. under 35 U.S.C. 103.

Regarding amended claim 10, firstly, the lens holder of this claim comprises a plurality of locking pins on the first housing half and a corresponding plurality of mounting holes in the second housing half. **The lens holder does not need other elements to integrate the housing halves together, and there are no other portions such as protrusions or projections on the outside surface of the first or second housing half.**

However, in Isaki, in order for the split lens barrels (20) to be combined, the master flange (37) and the fixing screw (41) are needed. In Tichenor et al., two casings are held together by screws (38). **That is, in each of Isaki and Tichenor et al., additional separate elements are needed to combine the separated halves together.** ***Neither Isaki nor Tichenor et al. teaches a combination of the two halves without the help of other separate elements. Further, because of the simple construction of the lens holder of the present invention, assembly of the lens holder is quick and convenient. However, the more complex structures of each of Isaki and Tichenor et al. require more laborious assembly of the separated halves thereof.*** For these reasons alone, the invention of claim 10 is unobvious over Isaki in view of Tichenor et al.

Secondly, **the first and second housing halves of the present invention are not completely the same, because one housing half has the locking pins and the other housing half has the cooperating locking holes.** However, **in Isaki, the two split lens barrels (20) are identical; and in Tichenor et al., the two casings are identical.** Any purported combination of Isaki and Tichenor et al. would still require substantial modification in order to arrive at the lens holder of the present invention. Therefore, the invention of claim 10 is unobvious over Isaki in view of Tichenor et al.

For at least the above reasons, independent claim 10 is submitted to be unobvious and patentable under 35 U.S.C. 103 over Isaki in view of Tichenor et al. Accordingly, claim 12 which is dependent on claim 10 should be patentable over Isaki in view of Tichenor et al.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isaki in view of Feng (U.S. Pat. No. 5,920,061).

Regarding claim 6, Examiner states to the effect that Isaki teaches the invention of claim 6 except a plurality of screw threads on the outside surface of the semi-cylindrical walls, and that Feng teaches a lens holder assembly (43) which has screw threads (57b) on the exterior surface of the lens assembly (43).

In response to the rejection, applicant asserts that claim 6 is now patentable, as follows:

Firstly, Applicant refers to and relies on the above assertions regarding patentability of claim 1 under 35 U.S.C. 103 over Isaki. Applicant respectfully submits that Feng does not provide any additional teaching to the teachings of Isaki which might lead one of ordinary skill in the art to provide the lens assembly of claim 1. That is, claim 1 is submitted to be unobvious and patentable over Isaki in view of Feng. On this basis, claim 6 should be allowable as being dependent on independent claim 1.

If further argument is needed, the lens assembly of claim 6 comprises a plurality of locking protrusions on the joining edge of at least one partition, and a corresponding plurality of mounting receptacles on the joining edge of the adjacent partition. The lens holder does not need other elements to integrate the partitions, and there are no other portions such as protrusions or projections on the outside surfaces of the partitions. **That is, in the present invention, the lens holder comprises at least two partitions with a set of screw threads thereon.** However, in Isaki, the combination of the split lens barrels (20) needs the master flange (37) and the fixing screw (41). The lens assembly of Feng is a single round one. **In Isaki, the outside surface of the master lens part (36) is not round because of the protruding fixing screw (41) and the eccentric pin, and therefore screw threads cannot be defined on the master lens part (36) Even though Feng teaches an optical assembly (43) with screw threads,**

the application of such teaching to the master lens part (36) of Isaki would not be practicable. ***Isaki and Feng do not teach a lens assembly which is composed of two or more partitions and which also has screw threads. One of ordinary skill in the art would not be motivated to provide a lens holder which comprises two or more partitions and also comprises a set of screw threads on the outside surface thereof.*** Therefore, the invention of claim 6 is unobvious and patentable over Isaki in view of Feng.

For at least the above reasons, dependent claim 6 is submitted to be unobvious and patentable under 35 U.S.C. 103 over Isaki in view of Feng.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isaki in view of Belliveau et al. (U.S. Pat. No. 6,172,822).

Regarding claim 9, Examiner states that Isaki teaches the invention as claimed above, except a funnel-shaped opening in the top portion of the lens holder, and that Belliveau et al. teaches a funnel-shaped opening when two halves of a lens assembly are assembled with each other.

In response to the rejection, applicant asserts that claim 9 is now patentable because its parent claim amended claim 1 is patentable, for the following reasons:

Firstly, in Isaki, **the combination of the split lens barrels (20) needs the master flange (37) and the fixing screw (41).** In Belliveau et al., the top cover (2) has a set of clips (45, 46, 47, 48) extending from the sides of the exterior thereof, and the bottom cover (3) has clip hole extensions (35, 36, 37, 38) extending out from the exterior of the lip thereof. **The clips (45, 46, 47, 48) and the clip hole extensions (35, 36, 37, 38) combine the top cover (2) and the bottom cover (3) into a unified lens holder (1).** ***Thus in each of Isaki and Belliveau et al., the lens holder is not round***

and cannot rotate in a cylinder-shaped member. However, the lens holder of claim 1 of the present invention comprises a plurality of locking protrusions on at least one partition and a corresponding plurality of locking receptacles on the adjacent partition. The lens holder does not need other elements to integrate the partitions, and there are no other portions such as protrusions or projections on the outside surfaces of the partitions. ***Accordingly, the lens holder is round with a cylinder shaped outside surface, and can rotate freely in*** another fixture such as ***a cylinder shaped member.*** For this reason alone, the invention of claim 1 is unobvious over Isaki in view of Belliveau et al.

Secondly, as detailed above, the lens holder of each of Isaki and Belliveau et al. is not round; therefore if these references were to be combined, linear movement of a lens holder relative to another fixture could be achieved only by linear movement of the lens holder itself. However, linear movement of the lens holder of claim 1 can be easily carried out by way of rotation of the lens holder in the fixture. This advantage underlines the invention of claim 1 being unobvious over that of Isaki in view of Belliveau et al.

Thirdly, in each of Isaki and Belliveau et al., it is difficult for the lens holder to be attached to another fixture such as a cylinder-shaped member. In particular, in Belliveau et al., a set of complex mechanisms is provided to assemble the lens holder (1) onto the drive holder (85). Isaki and Belliveau et al., alone or in combination, do not teach or suggest simple means for attaching the lens holder to another fixture. **Compare this with the present invention in which the lens holder is round, and is therefore easily attached to another fixture.** One of ordinary skill in the art would not have been motivated by Isaki, Belliveau et al., or any combination thereof to obtain the lens holder of claim 1. Therefore, the invention of claim 1 is unobvious over that of Isaki in view of Belliveau et

al.

For at least the above reasons, independent claim 1 is submitted to be unobvious and patentable under 35 U.S.C. 103 over Isaki in view of Belliveau et al. Accordingly, claim 9 which is dependent on claim 1 should be patentable over Isaki in view of Belliveau et al.

Claims 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaki in view of Tichenor et al. as applied to claim 12, and further in view of Feng.

Regarding claims 13, 14 and 16, Examiner essentially states that Isaki and Tichenor et al. teach the invention as claimed above and Isaki also teaches that the top and bottom halves have a semi-circular opening therethrough and that each partition platform has a semi-circular opening which is aligned with the semi-circular openings through the top and bottom portions. Feng teaches a lens holder assembly with screw threads on the exterior surface thereof, which Isaki and Tichenor et al. do not teach.

In response to the rejections, applicant asserts that the claims are now patentable, as follows:

As asserted above, the lens holder of claim 10 is unobvious and patentable over that of Isaki in view of Tichenor et al. **An optical assembly (43) disclosed by Feng is a single cylinder that does not comprise two or more split partitions.** Therefore, the optical assembly (43) of Feng is quite different from the lens holder of the present invention. Applicant respectfully submits that Feng does not provide any additional teaching to the teachings of Isaki and Tichenor et al. which might lead one of ordinary skill in the art to provide the lens assembly of claim 10.

For the above reasons, independent claim 10 is submitted to be

unobvious and patentable under 35 U.S.C. 103 over Isaki in view of Tichenor et al., and further in view of Feng. Accordingly, claims 13, 14 and 16 which are dependent on claim 10 should be patentable.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isaki in view of Tichenor et al. and further in view of Feng as applied to claim 14, and further considered with Belliveau et al.

Regarding claim 15, Examiner states to the effect that Belliveau et al. teaches a funnel-shaped opening, that Isaki, Tichenor et al. and Feng teach all of the other claimed limitations, and that it would have been obvious to combine these teachings to obtain the presently claimed invention.

In response to the rejection, applicant asserts that claim 15 is now patentable, as follows:

As asserted above, the lens holders of claims 10 and 14 are unobvious and patentable over Isaki in view of Tichenor et al., and further in view of Feng. Applicant respectfully submits that Belliveau et al. does not provide any additional teaching to the teachings of Isaki, Tichenor et al. and Feng which might lead one of ordinary skill in the art to provide the lens assembly of claims 10 or 14. For the above reasons, independent claims 10 and 14 are submitted to be unobvious and patentable under 35 U.S.C. 103 over Isaki in view of Tichenor et al. and further in view of Feng, and further considered with Belliveau et al. Accordingly, claim 15 which is dependent on claims 10 and 14 should be patentable.

Moreover, the very fact that as many as four references are cited to support the combination rejection is, in addition to the above assertions, further probative of unobviousness.

Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable